

REMARKS

The foregoing Amendment and Remarks which follow are responsive to the Office Action mailed March 7, 2007 in relation to the above-identified patent application. In that Office Action, the Examiner indicated that Claims 1, 2, 11, 12 and 20 were rejected under 35 U.S.C. §102(e) as purportedly being anticipated by the Osako et al. reference (US 6,988,668). However, based on the totality of the language included in Section 2 of the subject Office Action, it appears that the Examiner actually intended to identify Claims 1, 2, 6-12 and 16-23 as being anticipated by the Osako et al. reference, with the opening paragraph of Section 2 thus being in error. Clarification is requested by the Applicant. However, for purposes of this Amendment, Applicant assumes that Claims 1, 2, 6-12 and 16-23 currently stand as rejected under Section 102(e) as being anticipated by the Osako et al. reference.

Additionally, the Examiner indicated that Claims 3 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Osako et al. reference in view of the Hirai et al. reference (US 6,417,444). However, based on the totality of the language included in Section 4 of the subject Office Action, it appears that the Examiner actually intended to identify Claims 3, 4, 13 and 14 as being unpatentable over the Osako et al. reference in view of the Hirai et al. reference, with the opening paragraph of Section 4 also being in error. Clarification is again requested by the Applicant. However, for purposes of this Amendment, Applicant assumes that Claims 3, 4, 13 and 14 currently stand as rejected under Section 103(a) as being unpatentable over the Osako et al. and Hirai et al. references.

Further, the Examiner rejected Claim 24 under 35 U.S.C. §103(a) as being unpatentable over the Osako et al. reference in view of the Kodai et al. reference (US 5,244,840). Finally, the Examiner rejected Claims 5 and 15 under 35 U.S.C. §103(a) as being unpatentable over the Osako et al. reference in view of the Iwasaki reference (US 6,145,023).

Summary of Claim Amendments

By this Amendment, Applicant has amended independent Claims 1, 11 and 21 to describe the first and second encapsulation parts as being “*completely separated*” from each other by the “*substrate*.” Similarly, independent Claims 20 and 22 have each been amended

to describe the mold compound applied to the bottom surface being “*completely separated*” from the mold compound applied to the top surface by the “*substrate.*”

In addition, Applicant has amended independent Claim 21 to describe the first and second encapsulation parts of the memory card as each being “*exposed in the memory card.*” Additionally, independent Claim 22 has been amended to describe the mold compound applied to the substrate in accordance with the recited memory card fabrication method as being “*exposed in the memory card.*” Similar language is already recited in each of independent Claims 1, 11 and 20 in their current form.

Independent Claims 1, 11 and 20-22 are Not Anticipated by the Osako et al. Reference

Applicant respectfully submits that independent Claims 1, 11 and 20-22 are not anticipated by the cited Osako et al. reference. As is apparent Figures 1-3 and 19-21 of the Osako et al. reference, the IC card 1 comprises a wiring substrate 5 have an interconnect 10 formed on one side thereof, and an external connection terminal 6 formed on the side thereof opposite that having the interconnect 10 formed thereon. Attached to the side of the substrate 5 having the interconnect 10 formed thereon is semiconductor chip 7. The semiconductor chip 7 is electrically connected to the interconnect 10 through the use of a bonding wire 9. The semiconductor chip 7, bonding wire 9, interconnect 10 and a portion of that surface of the substrate 5 to which the semiconductor chip 7 is mounted are covered by a sealing portion 8 made of a thermosetting resin material. A portion of the remaining side of the substrate 5 having the connection terminal 6 formed thereon is covered with a sealing portion 3 which is made of a thermoplastic resin material.

As is explained in the specification of the Osako et al. reference and shown in the above-referenced figures thereof, the majority of the sealing portion 8 is covered by a case 2 as a result of the fitting of the sealing portion 8 into a complimentary dent or recess 2a defined by the case 2. That portion of the sealing portion 8 which is not covered by the case 2 is itself covered by the subsequently formed sealing portion 3, the case 2 and the sealing portion 3 being described as made of the same thermoplastic resin material. In this regard, the explicit teaching of the Osako et al. reference is that the IC body 4 collectively defined by the substrate 5, semiconductor chip 7, bonding wire 9 and sealing portion 8 is cooperatively engaged to the case 2 by the sealing portion 3, with a portion of the surface of the substrate 5

having the connection terminal 6 formed thereon and at least a portion of the surface of the case 2 on the side on which the IC body 4 is mounted being covered with the sealing portion 3 (see Osako et al. reference, column 5, line 66 through column 6, line 10).

Thus, based on the foregoing, Applicant respectfully submits that the clear teaching of the Osako et al. reference is that the external card shape of the IC card 1 is collectively defined by the case 2 and the sealing portion 3 thereof. In this regard, the sealing portion 8 is completely covered by the case 2 and the sealing portion 3, and thus is not exposed in the IC card 1. Moreover, as is seen in Figures 2, 24, 31, 34, 40, 46 and 47 of the Osako et al. reference, the case 2 and the sealing portion 3 are always in direct contact with each other.

In contrast, in each of independent Claims 1, 11 and 20-22, the first and second encapsulation parts (in the case of Claims 1, 11 and 21) or the mold compound (in the case of Claims 20 and 22) are each described as being “*exposed*” in the memory card. In the prior Office Action of August 22, 2006 rendered in relation to the present application, the Examiner characterized the sealing portion 8 of the Osako et al. reference alone as satisfying the second encapsulation part feature recited in each of Claims 1 and 11, and as further satisfying the mold compound applied to the top surface of the substrate as recited in step (d) of Claim 20.

In apparent acceptance of the Applicant’s argument presented in the prior Amendment of December 6, 2006 that the sealing portion 8 of the Osako et al. reference is completely covered by the case 2 and the sealing portion 3 and thus is not exposed in the IC card 1, in the subject Office Action, the Examiner now characterizes the combination of the sealing portion 8 and the case 2 as purportedly satisfying the second encapsulation part feature recited in each of Claims 1, 11 and 21, as well as the mold compound applied to the top surface of the substrate as recited in step (d) of each of Claims 20 and 22. Applicant respectfully submits that this hindsight characterization of two separate and distinct elements of the Osako et al. reference (i.e., the case 2 and sealing portion 8) as satisfying the aforementioned language of Claims 1, 11 and 20-22 is in not well taken since it appears to destroy the fundamental teachings of the Osako et al. reference and to ignore the accepted meaning of the term “encapsulating” as used in each of Claims 1, 11 and 20-22.

In the SEMATECH Dictionary of Semiconductor Terms (www.sematech.org), the term “encapsulation” is defined as follows:

encapsulation	1 : <i>in packaging</i> , the process of sealing or covering a circuit for
<i>n</i>	mechanical and environmental protection. [SEMATECH]

Thus, in semiconductor package and memory card art, the term “*encapsulation*” is taken to mean a process of sealing or otherwise covering another component for the primary purpose of mechanically and environmentally protecting such component. In each of Claims 1, 11 and 21, the “*second encapsulation part*” is specifically described as “*encapsulating the component*” mounted to the top surface of the substrate and, as indicated above, is further described as being “*exposed in the memory card.*” Similarly, in each of independent Claims 20 and 22, the mold compound is described in step (d) as being applied to the top surface of the substrate “*in a manner encapsulating the component mounted thereto*” and, as also indicated above, is further described as being “*exposed in the memory card.*”

Applicant respectfully submits that the clear, explicit teaching of the Osako et al. reference is that only the sealing portion 8 *“encapsulates”* the semiconductor chip 7 in accordance with the accepted meaning of the term in the relevant art. Indeed, consistent with the SEMATECH definition highlighted above, the specification of the Osako et al. reference actually states that the *“sealing portion 8”* is used for *“sealing the semiconductor chip 7”* (see Osako et al. reference, column 5, lines 33-34). There is absolutely no teaching or suggestion in the Osako et al. reference regarding the case 2 as *“encapsulating”* the semiconductor chip 7. In the embodiment shown in Figure 2, the case 2 does not even *“encapsulate”* the sealing portion 8 since a section of the sealing portion 8 which is not covered by the case 2 is actually covered by the sealing portion 3.

Simply stated, the sealing portion 8 which encapsulates the semiconductor chip 7 is not exposed in the IC card 1 as already recognized by the Examiner. Though the case 2 is exposed, it does not encapsulate the semiconductor chip 7, only the sealing portion 8 does. Construing the sealing portion 8 and the case 2 as being one and the same element destroys the fundamental teaching of the Osako et al. reference as indicated above, and is therefore believed to be inappropriate. Even if such construction was appropriate (which Applicant disputes), the element formed by the combined sealing portion 8 and case 2 is not *“completely separated”* from the sealing portion 3 since, as indicated above, the sealing

portion 3 and case 2 are always in contact with each other. In contrast, in each of amended independent Claims 1, 11 and 21, the first and second encapsulation parts are described as being "*completely separated*" from each other by the "*substrate*", while in each of amended independent Claims 20 and 22, the mold compound applied to the bottom surface is described as being "*completely separated*" from the mold compound applied to the top surface by the "*substrate*."

Thus, Applicant respectfully submits that independent Claims 1, 11 and 20-22 are not anticipated by the Osako et al. reference, and are in condition for allowance. Additionally, Applicant respectfully submits that Claims 2-10, 12-19, 23 and 24 are also in condition for allowance as being dependent upon respective allowable base claims.

Conclusion

On the basis of the foregoing, Applicant respectfully submits that the stated grounds of rejection have been overcome, and that Claims 1-24 are now in condition for allowance. An early Notice of Allowance is therefore respectfully requested.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

Date: 6/11/07

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